A CRITICISM OF EUGENICS.

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EUGENICS attracts a large share of public attention at the present day. It has been criticised from many points of view by a very large number of writers. The amount of this criticism is a proof of the interest which the subject arouses; it is fair also to attribute the virulent and even scurilous tone of no small part of the opposition to the strength real or apparent of the eugenic standpoint. Writings of the latter kind will be disregarded here. It is the object of this article to sum up that part of the criticism to which weight may be attached. Attention will, therefore, be confined not merely to reasonable criticism but to such aspects of it as have not, in the opinion of the present writer, been fully answered by eugenists.

It would be possible to take up the various arguments that have been advanced and deal with them one after another. It is not proposed to follow this method here since it would oblige us to traverse the same ground more than once. We shall pursue another course. It is generally recognised that any eugenic explanations of historical or social phenomena, as well as any eugenic propaganda, rest upon certain conclusions, some of which, as we shall point out, are biological and some sociological. An attempt will be made to examine the more important criticisms which appear to affect these necessary foundations of eugenics and to which no satisfactory answer is at present forthcoming.

Before we enter upon this task there is one point that it is necessary to emphasise. Whatever else eugenics may be, it is primarily a special department of science with its own particular field of observation. That field has as yet been little worked. It is not easy, perhaps, to define its boundaries. For practical purposes, however, it is clear enough that eugenics has for its study the bearings of the science of heredity together with such complementary studies as the influence of the environment upon human society. There is here a perfectly legitimate

field of study, and anyone who objects to the mere attempt to solve these problems is guilty of mediæval obscuranticism.

It does so happen, however, that many of those who have occupied themselves with these problems have come to certain conclusions with a practical bearing upon questions of the day. Speaking broadly, eugenists emphasise the importance of heredity as against environment. These views cause them to lay stress upon certain phenomena of social life at the present day and not only to advocate particular measures but also to criticise other proposals from their own special standpoint. Further their same views lead them, when considering the past, to offer explanations of historical facts of the cyclical rise and fall of civilisation. The justification for these views must rest, it is obvious, upon the results obtained in the particular field of study that we have described. But that in itself is not enough. The word eugenics suggests that, in addition to the study of heredity and allied subjects, we must inquire what qualities and characteristics are of value to society. If, therefore, we are to make a critical examination of the foundations upon which these views rest, we must study in the first place the knowledge we possess in connection with the mechanism of heredity, and secondly the problems which arise when we seek some criterion by which we may estimate the relative value of different qualities.

This article will thus fall into parts, and we must now attempt an examination of the relevant facts that have been established with regard to heredity and its complementary study the influence of the environment. The subject is so vast that we can do no more than summarise the present position of our knowledge with regard to the most important points; for our purpose the most important points are the mode of inheritance, the relative influence of heredity and environment and the manner in which selection operates.

Taking the question of heredity in the first place it must be allowed that the very large amount of work that has been done in late years all points to the importance of heredity. Not only the physical but also mental characters are inherited; not only obvious but also small insignificant qualities are

handed down from parent to offspring. Our present knowledge, therefore, leads us to believe that to a considerable degree—exactly how considerable will be discussed later—every individual derives his or her character from inheritance. It should, perhaps, be pointed out that we possess far more detailed knowledge of the inheritance of physical than of mental qualities. It cannot be said that the inheritance of mental characters has been established with anything like the same certainty as that of physical characters. There is a certain amount of general evidence in favour of an inheritance of a nature similar to that of physical characters, but conclusive evidence is lacking.[1]

At this point it may be observed that, although there is a general agreement with regard to the importance of heredity, there is no such agreement with regard to certain other problems in connection with the same subject. It will be obvious that the answer to these problems must make a great difference to the views which are held with regard to the bearing of inheritance upon society; and it will be submitted that so long as these problems remain unanswered we must be very cautious in the conclusions that we draw. Let us take two points. In the first place there is a sharp difference of opinion with regard to the question of "unit characters." Into this dispute we need not go. The practical result, however, is this; those who uphold the view that the basis of inherited qualities is ultimately to be sought in distinct "unit characters" are driven to believe that the selection—natural or artificial—of small variations is of comparatively little importance. The view of this school is represented by the following quotation. "From these considerations it follows that it will be difficult or impossible to make any definite or permanent change in the nature of a general population simply and solely by continual selection of extreme individuals, because in the vast majority of cases such individuals will be extreme fluctuating variants

[1] Schuster and Elderton. Eugenic Laboratory Memoirs I. This memoir is one of the most detailed investigations of this problem. The authors found the correlation between father and son and between brother and brother to be about .3 and .4 respectively. This is distinctly lower than the results for physical characters.

rather than mutants."[1] Those, on the other hand, who reject this theory believe that a permanent change is brought about by a continual selection of small variations at one or other end of the scale.[2] Until there is more general agreement among experts than can be discovered at present, the importance of what we observe is in progress in society at the present time must remain a matter of doubt.

In the second place, although we may regard the original theory of Lamarck in its crude form as disproved, there are allied problems of great importance still unsolved. It is impossible to disregard such work as that of Kammerer; in a recent series of papers he has described a number of careful experiments which, in any case, show that the problems of the inheritance of acquired characters cannot be taken as settled.[3] This problem is of especial importance; for eugenics, as generally understood, is based upon the assumption that it is to the germ plasm and not to the environment that we must look, when we seek the principal agent which determines the characteristics of future generations. If acquired characters are to any extent inherited, then to that extent we are thrown back upon the environment.[4]

There is further another aspect of this matter which is a subject of controversy at the present time. Many biologists, although they may regard the Lamarckian controversy as closed and do not pay serious attention to such papers as those of Kammerer, are inclined to hold that the germ plasm may, especially at certain times, be susceptible to the influence of the environment.[5] In other words the inherited qualities of any

[1]R. Pearl and F. M. Surface. Is there a cumulative effect of Selection? Zeitschrift für Induktive Abstammung—und Vererbungs Lehre. Bd. II. 1909.

[2]See for instance: W. E. Castle. Inconstancy of Unit Characters. American Naturalist. Vol. 46. June, 1912.

[3]For a summary of Kammerer's work see Verhandlungen des VIII. Internationalen Zoologen Kongresses zu Gräz, 1912, p. 263.

[4]Kammerer gives a summary of work on this subject, in addition to his own, in the following paper: Direkte Beweise für die Vererbung erworbener Eigenschaften. Verhandlungen des Naturforschenden Vereins in Brünn. Bd. 49, 1910.

[5]Tower. This raises the whole question of the cause of variations. Variations cannot be causeless, and it is difficult to see what causes there can be which, if known, we should not class as "environmental." The work referred to, however, suggests a cruder and more immediate cause of variation than those causes which in all probability will ultimately be found to be the chief causes.

individual may be what they are partly because of the environment to which the germ plasm of the parent has been exposed. A large amount of work is required before any certain conclusion is reached on this point; in the meantime any large generalisation as to the influence of the environment can only be tentative so long as a question of this magnitude remains outstanding.

Turning now to the question of the influence of the environment, we find that there is less precise knowledge available than in the case of problems of inheritance. The whole matter is one of very great doubt and difficulty. We neither know what characters are influenced by the environment, or, if characters are so affected, to what degree they can be changed. A short time ago anthropologists took it for granted that head length was susceptible to environmental influence, if susceptible at all, only to a slight degree.[1] Pigmentation and stature were found to be untrustworthy as guides to mark inherited racial differences. Far-reaching theories were thus based upon the assumption of the permanence of head form under changing environmental conditions. Doubt has, however, been cast upon the truth of this theory by the work of Professor Boaz on American Immigrants.[2] Work of this nature is very difficult, and there are many opportunities for errors to creep in. The truth in such a matter can only be established after many years of enquiry by different observers. Nevertheless it is fair to say that Professor Boaz's investigations show how remarkably little we know with certainty concerning the influence of the environment. Examples to prove our point could be multiplied to almost any length. We will take one more instance. Professor T. H. Morgan in the course of some experiments on the inheritance of the coat colour of mice observed the most remarkable change of colour which was clearly due to a change in the environment, to which he had knowingly, but without any particular object, subjected the mice. This result was evidently the cause of some surprise and perplexity to the

[1]By environmental influence is here meant climatic and other conditions. Head form can, of course, be changed by forcible distortion.

[2]Boaz. Changes in the Bodily Form of Immigrants, 1912.

author, whose experiments were based on the assumption that the differences observed in coat colour were due to inheritance.[1]

With regard, therefore, to the susceptibility of different characters to the influence of the environment, it must be admitted that we know very little about the matter. Evidence is not wanting that the environment affects such characters as head length and coat colour in a manner not previously suspected. The point that we wish to make is this. In the face of so much ignorance concerning, not only heredity itself, but also its complement, the influence of the environment, how can anyone be justified in making sweeping generalisations with reference to these subjects?

Such generalisations, however, are made. It is said that we have a definite proof that inheritance is of far greater strength than environment. This argument takes the following shape. The correlations between parent and offspring for a number of features have been calculated, and the mean is found to be somewhere about ·5. Correlations between individuals and various aspects of their environment have also been worked out—as, for instance, mental ability and conditions of clothing, or between myopia and the age of learning to read—and the mean value is found to be about ·03. It is then said that the mean "nature value" is at least five to ten times as great as the mean "nurture value," and upon this is founded the generalisation that "nature" is of far greater importance than "nurture."[2] It may be questioned, however, whether such a comparison does not involve a serious mistake. For if we consider the two mean values that are compared, we find that, whereas the "mean nature value" is the mean value of a number of observations, all of which provide a full measure of the strength of heredity, the "mean nurture value" is the mean value of a number of observations, each of which measures only the strength of some one isolated aspect of the environment. It would appear then that the full strength of inheritance has been compared, not with the full strength of

[1] T. H. Morgan, Influence of Heredity and Environment in determining the coat colours in mice. Annals of the New York Academy of Science. Vol. XXI., 1911. p. 87, p. 117.

[2] Karl Pearson. Nature and Nurture. Eugenic Laboratory Lectures, VI., p. 25.

environment, but with the average of a number of small isolated aspects of the latter. As a matter of fact it is quite beyond our power at present to sum up the full effect of environment upon the individual and compare it with the full effect of heredity. We are, therefore, justified in saying that we neither know in particular cases how far the environment can produce any effect, nor can we make any definite statement as to the comparative strength of "nature" and "nurture."

Before we attempt to sum up the present state of our knowledge concerning the purely biological foundations of eugenics there is one other matter which deserves mention. It is too often forgotten that human environment differs from the environment of wild species in one most important aspect. The environment into which human beings are born consists not only of the influences of climate and so on, but also of what we may call "tradition." "Tradition" may be considered as a vast accumulation of tools which the reasoning power of man has invented to meet the difficulties of daily life. These tools are not merely tools in the ordinary sense of the word—various mechanical appliances for production and transport—but also such instruments as language and the regulations and traditions for the ordering of society. The important point to observe is that, whereas the environment of wild species is not capable of cumulative improvement, tradition can be so improved. The result is that an improved tradition does not benefit one generation only, but future generations also, and the following generation, though endowed, perhaps, no more fully with natural qualities than that which gave it birth, starts with better tools and can therefore achieve greater results. This point is often overlooked by those who speak of the futility to improve the environment.

Let us now attempt to sum up biological knowledge with reference to those matters which intimately concern eugenics. One fact of the greatest importance emerges from recent work. We have reason to believe that every characteristic, mental or physical, exhibits the form which it takes owing in some degree to the ancestry that has given rise to the individual. In other words every individual inherits certain potentialities which

determine within a certain range of variation the qualities which he will exhibit. We cannot build very much upon this knowledge since we have to set against it the following facts. We do not know how far all the various potentialities are inherited with the same intensity; we are ignorant as to the degree to which they are correlated or are inherited independently one of another. We are ignorant with regard to the effect of the environment upon one generation in producing changes in the inherited potentialities of the next, both in respect of the so-called inheritance of acquired characters and of the influence of the environment upon the germ plasm at certain definite times. More important still such different views are held as to the mode of inheritance that had we the opportunity, and did we wish to attempt to breed certain qualities in the human race, we should have to make a long series of experiments before we could be certain that we had found the right method whereby to achieve our object. Our ignorance again concerning the influence of the environment upon the characteristics of the individual in its lifetime is so profound that we can make no generalisation as to the relative influence of heredity and environment.

It would seem, therefore, that, although we are in possession of one fact of the highest importance, we can make but little use of it in the present state of our knowledge. How is it possible to lay down a programme, to criticise modern tendencies or to explain past history? For all such attempts must rest upon the same basis. And surely the basis must be very insufficient when, to take but two points, we do not know what form of selection is effective, and we are not agreed concerning the inheritance of acquired characters.

Whatever view may be taken by the reader as to the weight that is to be attached to the objections raised in the first part of the article, the second part is entirely independent. We have now to consider the estimation of the value of different characteristics to society; this question has no connection with the biological foundations of eugenics. It is possible to disagree with all that has been said so far and agree with all that follows.

In approaching the second part of our subject it will be of assistance to us to describe rather more fully what it is that eugenists desire. They wish to see changes made, whether in the constitution of society by means of law, or in the outlook of individuals by means of a shifting or growth of opinion, owing to which the relative amount of certain inherited potentialities in society as a whole may be either increased or diminished. Certain critics of eugenics have objected at this early stage.[1] The burden of such criticism seems to be that the production of children is of so intimate and sacred a nature as to make any outside interference undesirable. It would appear to have been forgotten that a large number of our legal enactments do at the present time inevitably affect the production of offspring, and it is almost impossible to move far in the direction of social reorganisation without so doing. With the majority of reasonable people such criticism will have no weight; they will agree with Professor Hobhouse that "the improvement of the race by rational selection is in the abstract a perfectly legitimate object."[2]

There are two main difficulties with which we meet; we shall consider them each in turn. We must ask whether in such a state of society, as at present exists, it is possible to estimate what inherited qualities are present in the population. Then we must further ask whether, even if we can estimate with sufficient accuracy their nature and quality, it is possible to encourage some and discourage others.

With reference to the first point it is obvious that we are dealing with individuals who are what they are owing to the combined influence of heredity and environment. There are present two factors in unknown proportions. If we are to measure the strength of heredity in each case it is clear that we must eliminate the influence of the environment. The only method whereby we can do this is to make the environment similar for all; the observed differences will, in that case, be due to inheritance. To put it in another way, we may consider

[1]See for instance Professor Lester Ward's article, Eugenics, Euthenics and Endemics, in the American Journal of Sociology. Vol. xviii. 1913.

[2]L. T. Hobhouse. Value and Limitations of Eugenics. Sociological Review. Vol. IV. 1911, p. 282.

the different members of society as competing in a race. If all the competitors start level, then the order in which they come in will measure their relative endowments—or, at any rate, the relative strength of that endowment which enables them to run in that particular race. If, however, the competitors start with different handicaps, the result of the race will provide no means of estimating the relative endowments unless we can make an allowance for the handicaps.

The point, therefore, is this. It is essential that we should know the relative strength in different individuals of the various inherited qualities which interest us—whether it be mental ability, beauty, stature, or what not. To do this the environment to which they are subjected must either be fairly similar or we must be able to discount the effect of various environments. It must be obvious from what has been said above as to the state of our biological knowledge as to the influence of the environment upon individuals that we cannot at present make any satisfactory discount. We are, therefore, faced with the fact that, unless the individuals with whom we are dealing are subject to something not far removed from the same environment, we are unable to say how far the observed differences are due to environment and how far they are due to inheritance.

Our next step must be to inquire into the conditions of the environment in modern society. It so happens that this very question has occupied the careful attention of economists. It used to be somewhat of a puzzle to explain the differences between the returns in different occupations. Observations upon the condition of society led economists to formulate the idea of "non-competing classes," and this theory has been tested by subsequent investigation and now holds the field. The explanation of the difference of returns in different classes is that, for all practical purposes, they do not compete. We cannot, therefore, even picture members of society starting on a race with different handicaps; the more correct analogy would be to picture a number of different races. All these races are run at the same time, and the result is that we are led to think that all the competitors are bidding one against another. As a

matter of fact the conditions under which each race is run are so different, and demand such different qualities, that success in one race does not enable us to judge whether the winner would be successful in another race.

If this is so, it suggests that at all events the result of the contest within the same competing class must be some measure of the endowments of those who take part. Here, no doubt, we are upon safer ground. But there are many difficulties that must make us pause before we commit ourselves to the assumption that such a contest provides any but the vaguest indication of the true endowment. The mental and emotional characteristics of human beings are very highly organised, complicated and delicate. So delicate are they, so susceptible to what may seem small chance happenings, that a minor incident may impress itself upon the character and mark it for a lifetime. We are in fact dealing with such susceptible material that the most insignificant occurences, a chance conversation in early life, some unfortunate and wholly accidental event which the difference of a few minutes in coming or going might have avoided, will have so great an influence that any individual may fall either into the category of the successful or the unsuccessful with remarkably little reference to their real endowments. Surely, the fact that a vast mass of literature turns upon such events, and that such literature excites some of the deepest interests of mankind, is a testimony to the general truth of what we have tried to express.

We may, however, merely for the sake of argument disregard what we have said; we may grant that members of society do in the main compete as it were in the same race, and that chance happenings in a small degree only affect the result of the contest. In this case we must attempt to obtain some grasp of the true extent of these differences in the environment that everyone agrees do exist. Fortunately we possess the results of several careful enquiries into the condition of the working classes. Most people have, at all events, heard of the investigation of Mr. Booth in London and Mr. Rowntree in York. This year there has appeared the result of a similar

enquiry carried out in Reading.[1] It will be interesting to quote some of the conclusions arrived at in this paper. "We may affirm that, on the basis described, from 25 to 30 per cent. of the working class population in Reading were in 1912, so far as they were dependent on their earnings, pensions or possessions below Mr. Rowntree's standard." It should be explained that this standard is calculated so as to ascertain the income necessary to supply a minimum sufficiency of nourishment, and that "nothing is allowed for insurance (other than state), pocket money, tram fares, beer, betting, newspapers, or any of the other ordinary objects of expenditure other than necessaries." In the same report Mr. Bowley says, "We shall find, I think, somewhat over 13 per cent. of the industrial working-class population of Great Britain below the standard at any one time, as compared with 15½ per cent. at York and 25 to 30 per cent. in Reading. But a very much larger proportion of families pass below the standard at one time or another, and it is evident that the proportion of children affected is much greater than the proportion of adults."

It is not necessary to multiply evidence. We may fairly ask whether in the face of such handicaps success or failure in the contest—supposing for the moment that there is one contest in society as a whole—is any criterion of endowment. Consider for a moment the purely physical results that the existence of such a degree of poverty must bring in its train. Can we expect to see the full, or, indeed, anything like the full, physical development of which these stocks are capable? Can we expect that life under these conditions will enable us to judge whether or not these stocks possess the "good and noble qualities" which Mr. and Mrs. Whetham seem to think are present in such a far higher proportion among the upper classes.[2] It would seem that mental qualities are far less likely to attain their full development under such conditions than physical qualities; the degree to which mental development must be checked not only by the poverty of the surroundings, but also

[1] A. L. Bowley. Working Class Households in Reading. Statistical Journal. Vol. LXXVI. June, 1913. p. 672.

[2] W. C. D. and C. Whetham. The Extinction of the Upper Classes. Nineteenth Century, July, 1909, p. 98.

by the uninspiring "tradition" to which generations of poverty have given rise, must be incalculable.

Lest it be thought that we have in the above paragraphs been at pains to defend a point of view that needs no defence, it may be as well to show that the relative superiority of inherited characters in the so-called upper classes is taken by many writers as though it had been definitely proved. What has been proved is that these upper classes are not increasing so fast as the lower classes. When Dr. Heron investigated this matter he gave his paper the following title: "On the relation of fertility in man to social status and on the changes in this relation that have taken place during the last fifty years."[1] He made no assumption as to the relative excellence of the stocks, the fertility of which he found to vary. In the work of other authors, however, it has been calmly assumed that certain stocks are superior to others. "The marked decrease in size of the family in the successful class began, as we have seen, about 1875. One generation of these classes, the generation now in early manhood, consists of about half the number of individuals that should be found. What are the probable and realised effects of this shortage of men and women of our best stocks compared with the growth of the people as a whole?"[2] Again from the same authors: "Two hundred thousand births fewer than should be expected now take place in the British Isles—one-fifth of the annual total. And this fifth that is wanting is the most valuable fifth of the whole, the younger children of large families in the best stocks of the nations."[3] There is no space to multiply quotations, but we may allow ourselves to give one more since the point of view of which we complain is put with great clearness. In a paper which he calls "The cause of the inferiority of physical and mental characteristics in the lower social classes," Professor Niceforo says, "I believe it is the physical and mental characters of men which contribute sensibly to unite men in groups of similars; to push them towards certain determined professional groups; to make

[1] Heron. Draper's Company Research Memoirs. No. I. 1906.
[2] W. C. D. and C. Whetham. The Family and the Nation, p. 164.
[3] W. C. D. and C. Whetham. Loc. cit. p. 208.

them mount or descend the steps of the social ladder, and by that to create the special demographic life of each group."[1]

It is submitted that this assumption that the lower classes are inferior to the upper classes is unproven. There is very little that is definite, it is true, to show that mental ability is as common in the lower as in the upper classes. But indications that it is so are not wanting. Such movements as that represented by the Workers' Educational Association have taught us something in late years about a subject concerning which we are otherwise for the most part in the dark. Those who have had most experience of movements of this kind have not found any reason, so far as the knowledge of the present writer goes, to believe that mental ability is not as frequently present in the classes which these movements have touched as in the upper classes. Practical experience also teaches us an important fact. It is continually stated that those members of the lower classes who possess the ability to rise will do so and that the small numbers of those who actually rise is an indication of the comparative lack of ability. As a matter of fact those who are best acquainted with the facts agree that the most desirable members of these classes show, if anything, an aversion to attempting to improve their position in the social sense. The number of artisans, therefore, who become clerks is no guide as to the amount of ability latent in the former class.

We have now arrived at the last subject that we have to discuss. We may grant that in the course of time we shall acquire definite knowledge concerning biological problems which are at present obscure. We may further allow that some day in the future society will be so organised that for all practical purposes everyone will have an equal opportunity. Under such circumstances achievement would be a measure of endowment. But there are still two difficulties. In the first place would the individuals who achieved success be those who, upon the whole—that is to say from an ultimate and not from an immediately practical point of view—were the most valuable, and, therefore, the most desirable? Secondly, supposing that we could fix both upon the most desirable qualities and the

[1] Problems in Eugenics, 1912, p. 187.

individuals who possessed them, we must ask whether the increase of the stocks possessing these qualities would be a net gain and whether these qualities are of so definite a nature that they could be encouraged either by legal enactments or by a change in the social conscience?

As regards the first point it is obvious that we can only deal with society as we know it. The form that society will assume in the future—even in the near future—is far too doubtful a matter to make it worth while to consider what qualities will then meet with success. At the present day success for the most part is either professional or commercial. To take the last class first. What are the characteristics that distinguish the successful business man? It is a remarkably difficult question to answer. Perhaps a faculty for getting himself trusted is the most obvious characteristic. Can it be maintained, however, that this class, whose numbers without question fulfil a valuable function in that peculiar transitory condition of social organisation in which we happen to find ourselves, is distinguished by particular hereditary qualities, the loss of which to society through relative infertility would be a matter of serious concern in any ultimate sense?

When we come to consider professional as distinguished from commercial success we are on firmer ground. It seems probable that professional success can be traced to the presence of a definite inheritable basis, whereas it is by no means obvious that this can be done in the case of commercial success. This subject is of peculiar difficulty, and we can do no more, owing to lack of space, than refer to it here. It is necessary, however, to emphasise most strongly the danger of taking it for granted that success, quite apart from the question of the reality and extent of the competition with which the successful have to contend, is a sufficient measure of true value of qualities. To take one point only, it cannot be doubted that practically all our social problems would be simplified, to say the least of it, in proportion to the extent to which what we may call "decency," for want of a better word, became common throughout society. By "decency" is meant a mixture of many characteristics, such as good nature, unselfishness, good taste,

and so on. These qualities may or may not be inherited. He would be a bold man, however, who claimed that success was intimately connected with the extent to which they are developed.

Let us pass to the next difficulty. If we write down a list of the qualities, that are constantly referred to in eugenic literature as desirable and the reverse, we find that it is now, and will probably always remain, impossible to encourage many of them even if we suppose them to be inherited. Sir Francis Galton mentioned together health, energy, ability, manliness and courteous disposition.[1] In another place he says: "I have studied the causes of civic prosperity in various directions and from many points of view, and the conclusion at which I have arrived is emphatic, namely, that chief among these causes is a large capacity for labour—mental, bodily or both—combined with eagerness for work."[2] Of all the qualities here mentioned, supposing them for the moment to be inherited, not one, with the possible exception of ability, is sufficiently definite to enable us to define and mark off the stocks which possess it. If these characteristics are inherited, it is probable that they are compound—that is to say that they are the outward expression of several other factors, some of which may be in themselves good and others bad. It also seems likely that these characteristics may arise as the outward expression of several different combinations of factors. Let us consider for a moment the cause of beauty. There is not only no agreement as to its definition, but no agreement as to what it is in actual fact. It would be quite impossible to encourage any one stock because it excelled in this feature, and it seems more likely than not that this difficulty will always remain. If we are correct in our analysis of these qualities, we are faced with a difficulty which is not merely temporary but, as far as we can see, insuperable.

This, of course, is not so with regard to all qualities. It is clearly possible to distinguish certain stocks—those which are pathological for the most part, such as the feeble-minded

[1]Sociological Papers, 1906, p. 46.

[2]Eugenics Review. Vol. I., p. 75.

and the tuberculous. It is far more difficult to mark off the desirable strains. It may be possible to do so with regard to ability. The old view that there are several entirely distinct kinds of ability is now disputed. It is held that there is a quality of "general ability" which may be specialised in different directions.[1] If such a quality of "general ability" exists and is inherited, then it seems probable that those who are professionally successful are distinguished by the possession of more than the average share of this quality. With regard to those who win success in business it certainly cannot be affirmed with anything like the same degree of assurance that they are thus distinguished.

It comes, therefore, to this. The organisation of modern society is such that those characteristics that win success for their possessors may often be of a nature which is merely of temporary value. When we consider these qualities which are by general agreement recognised as good or bad, we find especially among the former that a large number are very vague—so vague indeed that it seems impossible to encourage some and discourage others. We are thus left with a few "good" and rather more "bad" qualities; the latter are mostly pathological. Before, however, we can affirm that laws and customs, which favour one group and discourage the other, should have our approval, we must in passing judgment upon any stock look beyond the possession of any single characteristic. We must be convinced that the relative increase or decrease of any stock would be a net gain or a net loss. Take the case of epilepsy, it is without question in itself a very serious defect. But can we be absolutely certain that the disappearance of all epileptic stocks would be a net gain? At present we know so little with regard to the correlation of one such character with others that we are ignorant concerning the full effect of the elimination of any one character.

To take another example—let us consider the case of tuberculosis. Here again we are faced with the difficulty that we do not know in the least what the net result of an elimination of

[1]B. Hart and C. Spearman. General Ability, its Existence and Nature. British Journal of Psychology. Vol. II., Part I., 1912.

tuberculous stocks would be. If all the tuberculous stocks had been wiped out three hundred years ago, many eminent men, to whom the human race is deeply indebted, would never have been born. Of that we can be certain; it is quite beyond our powers, however, to weigh in the balance the undoubted mental and physical suffering and the material loss, due to the presence of a pathological stock on the one hand, and the services rendered by those afflicted with this defect on the other. Until we can make this calculation, how can we advocate measures that would deliberately tend towards the disappearance of the tuberculous? Supposing that we could make the calculation, there is another difficulty which applies also to other cases. Even if we were certain that the elimination of the tuberculous would be a net gain, we should have to take the progress of medical knowledge into account. No one can set the limit to medical skill; it is, therefore, impossible for anyone to affirm that in fifty years' time, the progress of medical skill may not have so far alleviated the condition of the tuberculous that their elimination would be a net loss.

These considerations with regard to the nature of the different qualities lead to the following general conclusions which are of necessity merely tentative. It would seem that there are a number of qualities which are present to some degree in all men. Any one individual may possess the average amount, or he may possess more or less than the average. Some of these qualities are of an apparently simple nature, that is to say, they are not the result or outward expression of several different factors. Such may be the case with ability for example. In these cases we may hold that, other things being equal, it is desirable to encourage these individuals which present more than the average development of the desirable and less than the average of the undesirable qualities. Other characteristics are of a complex nature; and for the reasons given above, we cannot advocate their encouragement because there is no reason to think that in so doing we should favour one particular factor which is the underlying basis of the character in question. There are other qualities again which are not present to some degree in all men. In these cases

whether they are what we have called simple or complex, it is impossible for the most part to affirm that their encouragement or elimination would be a net gain or a net loss.

We may now attempt in a very few words to sum up the criticisms that we have made and the conclusions that we draw from them. Throughout the greater part of this article it has been our object to show that we are at present ignorant concerning many problems, the answers to which are of fundamental importance. This ignorance will, in course of time, give place to definite knowledge. It should be noticed that the answer to certain problems, as yet unsolved, might invalidate the belief which is commonly held by eugenists. It would be so should it, for example, be established that the influence of the environment had an important influence upon future generations. The answers to other problems, as, for instance, to the relative prevalence of various qualities in the different social classes, are not of fundamental importance. They might show that eugenists had for the most part misinterpreted certain facts; that would be all. Other objections again are of more serious import. We refer particularly to the difficulty, if not the impossibility, of isolating certain characters that are recognised as "good" or "bad." If this objection holds good, the scope of eugenics is very much narrowed.[1]

It only remains to consider the bearing of these criticisms upon the assumptions commonly found in eugenic literature. It is not too much to say that it is generally assumed that our knowledge is sufficient to enable us to deduce the results of certain social phenomena—particularly the result of a differential birth-rate. The following statement is typical of the literature to which we refer. "The present ordering of all civilised societies, and particularly of our own, is promoting, not the improvement of the race, but its degradation, and that at a very rapid rate."[2] If a fraction of our criticism is well founded, an unqualified statement of this kind must be held to be quite un-

[1]Should it turn out that the relative importance of heredity is not so great as is generally held by eugenists, this fact would not in itself strike at the foundations of Eugenics. The Eugenic case rests rather upon the fact that heredity has some influence upon all characteristics than upon its dominating importance.

[2]F. C. S. Schiller. Practicable Eugenics in Education. Problems in Eugenics, 1912, p. 162.

justified. If it is unjustified with respect to modern society, then, a fortiori, the explanations of decadence and the cyclical rise and fall of civilisations must be without foundation. Such explanations seem to have an especial attraction for eugenists. The author of the paper just quoted proceeds to make certain remarks from which we can only gather that eugenics has already solved to his own satisfaction the perplexing problems of decadence. When it is remembered that, in addition to the difficulties which we have raised, we have remarkably little exact information—especially statistical information—about ancient society and the former condition of European nations, we can only wonder at the boldness of these statements. We will add one other difficulty. It is said that, when a certain state of prosperity is reached, differential fertility tends to make its appearance in any society; to this is attributed the common phenomenon of decadence. We must point out that the sudden rise of certain societies, not only to commercial prosperity but also to intellectual and artistic predominance, has also to be explained. Take, for instance, that of the Dutch in the sixteenth century. No one attributes this to differential fertility of a favourable nature. We find on the other hand a connection between such phenomena and particularly favourable outward circumstances. Further the subsequent prosperity seems clearly to bring in its train an unfavourable environment—that is to say circumstances no longer favour individuality or stimulate originality. Whatever effect differential fertility may have, we possess here an explanation that is without question of importance; and there is certainly no necessity or even justification in the present state of our knowledge for explaining these ups and downs of civilisation as due to differential fertility.

In conclusion we may say that the above discussion tends in no way to diminish the importance of eugenics as a subject of research. On the contrary it tends to emphasise the urgent importance of fuller investigation in many fields. We have attempted, however, to show that although the opinions usually held by eugenists may be justified, justification is at present lacking.

[The Editorial Committee invites contributions to the discussion of points raised in this article.]